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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,358	06/12/2001	Koichi Miyachi	1035-328	2180

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EXAMINER

ALPHONSE, FRITZ

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/878,358

Applicant(s)

MIYACHI ET AL.

Examiner

Fritz Alphonse

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 130-139 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 130-139 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's election without traverse of claims 130-139 in Paper No. 6 is acknowledged.
The election is final.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 130, 132-134, 136-139 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen (U.S. Pat. No. 5,592,193).

As to claims 130, 132, 137 Chen (figs. 3-6) teaches about an image display device (LCD panel 62), comprising: a plurality of display elements (see fig. 2; col. 4, line 6-7), making up a screen, for modulating light according to image data which is applied while being scanned (col. 4, lines 7-18). Chen (fig. 3) shows an illuminating section (i.e., backlight panel 64) for illuminating the display elements (62), wherein: when those of said display elements (62) having the same scanning time make up a display element band (note backlight zones 1-M forming the display element bands 62a-62j), said display element band is grouped into display element groups (note groups (62a, b, c, d, e) and (62 f, g, h, i, j) correspond respectively to backlights 64a and 64e) in order of earlier scanning time and to include at least one display element band in one display element group, and said illuminating section (64) includes a plurality of illuminating elements (64a-j), at least one of which is provided for each display element group (Chen fig. 5 shows one backlight for each element groups), and each illuminating element illuminates said

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display elements per said display element group while undergoing change between first luminance and second luminance which is darker than the first luminance (note the change occurring in the display panel when a scanning "ON" state is applied and the remaining scanning electrode biases to the "OFF" state), at a period of one frame time of the screen and at a timing of change which is different in each display element group, and between said illuminating elements are provided a partition member for parting adjacent illuminating elements (see col. 4, lines 6-46).

As to claims 133-134, Chen discloses an illumination device, wherein said display device of a shutter type is a liquid crystal display device (note in fig. 2, the LCD layer 45 formed between the transparent substrates 42 and 48); and wherein the illumination device comprising a partition member (108, see figure 8), provided between the illuminating element groups, for dividing the illuminating element groups.

As to claim 136, the claim differs from claim 1 by the additional limitation "a timing of change of luminance of the illuminating elements being different in each illuminating element group". However, this limitation is disclosed by Chen (see col. 2, lines 49-53).

As to claim 138, Chen (figs. 3-5) show an illumination device, wherein the illuminating section (note 10 backlight Zones 64a-j) sets the second luminance (64b) in each display element group at least from the time when a display element band A (i.e., 64a) having the earliest scanning time is scanned, to the time 1/10 of one vertical period is elapsed.

As to claim 139, Chen (figs. 3-5) show an illumination device, wherein the illuminating section (64a - j) sets the second luminance (64b) in each display element group at least from the time after an elapsed {fraction (1/10)} time period of one vertical period from the time a display

element band A (i.e., 64a) having the earliest scanning time is scanned, to the time another {fraction (1/10)} time period of one vertical period is elapsed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 131, 135 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Morishita (U.S. Pat. No. 6,504,587).

As to claim 131, Chen discloses an image display device (LCD display panel 62), comprising: a plurality of display elements (see fig. 5; 62 a-j), making up a screen, for modulating light according to image data which is applied while being scanned; (note the scanning "ON" state applied to the display panel 62) and an illuminating section for illuminating the display elements (note the backlighting arrangement for the LCD), wherein: when those of said display elements having the same scanning time make up a display element band (note backlight zones 1-M forming the display element bands 62a-62j), said display element band is grouped into display element groups (note groups (62a, b, c, d, e) and (62 f, g, h, i, j) correspond respectively to backlights 64a and 64e) in order of earlier scanning time and to include at least one display element band in one display element group, and said illuminating section (64) includes a plurality of illuminating elements (64a-j), at least one of which is provided for each display element group (Chen fig. 5 shows one backlight for each element groups), and each

illuminating element illuminates said display elements per said display element group while undergoing change between first luminance and second luminance which is darker than the first luminance (note the change occurring in the display panel when a scanning "ON" state is applied and the remaining scanning electrode biases to the "OFF" state), at a period of one frame time of the screen and at a timing of change which is different in each display element group.

Chen does not teach about a reflecting plate for reflecting light from the illuminating elements in a direction toward the display elements, and wherein said reflecting plate has concave portions in which the illuminating elements are disposed.

However, in the same field of endeavor, Morishita (figs. 1 and 7) show a backlight unit (300) having a reflective plate (i.e., reflector 36) for reflecting light from the illuminating elements (cold cathode lamp 35) in a direction toward the display elements, and wherein said reflecting plate has concave portions in which the illuminating elements are disposed (see fig. 7).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention to combine Chen's backlight arrangement for LCD with the backlight unit 300, as disclosed by Morishita. Doing so would provide a LCD device free from occurrence of the shading at the peripheries of the display area of the liquid crystal display panel viewed from the observer side.

As to claim 135, Chen does not disclose an illumination device comprising a reflecting plate, dividing the illuminating element groups, for reflecting emitted light of the illuminating elements of the respective illuminating element groups toward a specific upper area. However, these limitations are clearly disclosed by Morishita (col. 6, lines 38-59).

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bull et al. (U.S. Pat. No. 5,093,652) discloses a display device having a lattice of pixel elements.

Numao (U.S. Pat. No. 5,103,328) discloses a liquid crystal display device having light shutter elements.

Zhang et al. (U.S. Pat. No. 5,387,921) disclose a scanning back illuminating light source for LC and other displays.

Van Duijneveldt (U.S. Pat. No. 5,971,567) disclose a backlight luminaire.

Sakamoto (U.S. Pat. No. 6,429,839) discloses a liquid crystal display apparatus and electronic device for providing control signal to LCD display apparatus.

Hirakata et al. (U.S. Pat. No. 6,636,190) discloses a LCD having an improved lighting device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz Alphonse whose telephone number is (703)-308-8534. The examiner can normally be reached on M-F, 8:30-6:00, Alt. Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J Saras can be reached on (703)-305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the receptionist whose telephone number is (703)-306-0377.



Fritz Alphonse

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January 28, 2004



STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600